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## Global Health Public-Private Partnerships: IAVI, Partnerships and Capacity Building

R Hanlin\*, J Chataway and J Smith

ESRC INNOGEN Research Centre, Open University and University of Edinburgh, Edinburgh, EH1 1LZ UK

### Summary

New developments in biotechnology and the need to overcome the lack of incentive for investment in vaccines for diseases affecting Africa have led to the promotion of product development public-private partnerships (PPP). Our work at the ESRC INNOGEN Research Centre assesses the way in which these collaborative mechanisms approach their mission of getting science to work for the poor and what they contribute to broader development objectives, particularly in relation to capacity building. Case study research of the International AIDS Vaccine initiative (IAVI) and their work on the ground in Africa and India has highlighted two legal related issues. First, by working as a PPP the organisation has changed the 'ownership' of science, making the process more flexible and emphasising a bottom-up dialogue process while advocating a private sector ethos. Second – whether intentionally or not – the partnership's emphasis on advocacy and communications has increased the importance of knowledge generation and management activities within the partnership and its availability to stakeholders. This paper attempts to ascertain the impact of these issues for the building of health research capacity.

**Keywords:** *Public-private partnerships, biotechnology, development, capacity building, knowledge management*

### Résumé

Les nouvelles développements en biotechnologies et le besoin de vaincre le manque de motivation for l'investissement en vaccin contre les maladies affectant l'Afrique ont conduit à la promotion et le développement des produits dans le partenariat entre le secteur public et privé (PPP). Nos travaux au centre de recherche ESRC INNOGEN évalue les moyens par lesquels ces approches de mécanismes collaborative, leur mission de faire la science utile pour les pauvres et dans l'achèvement de leur objectifs développementaux particulièrement sur la

formation du personnel. Une étude sur l'Initiative Internationale de vaccin contre le SIDA et leurs travaux sur le terrain en Afrique et Inde a illuminé deux problèmes d'ordre légaux. Premièrement comme le PPP a changé leur politique de propriétaire en science, faisant un procès plus flexible et plus de dialogue, cependant avec un éthos dans le secteur privé. Soit intentionnel ou pas, l'appui du partenariat est sur la défense et la communication ont apporté d'important génération des connaissances les activités de ménagements entre le partenariat. Ceci augmente la disposition et l'accès à la connaissance à la variété de partenaires. Ce papier apporte une vue approfondie et les implications sur le transfert des capacités et la formation du personnel.

### Biotechnology and public-private partnerships

New developments in biotechnology have the potential to contribute in a very positive way to health related problems affecting the developing world [1]. In particular, technologies such as genetically-engineered vaccines that are cheaper, safer and more effective than current vaccines hold new promise in fighting HIV/AIDS, malaria and tuberculosis [2]. However, as is often the case, the difficulty lies not in the science itself but in appropriately applying that science in the developing world. This is particularly difficult when the private pharmaceuticals sector lacks the incentive to address the needs of the sickest and poorest due to low financial return. The result is that 90 per cent of all medical research is targeted at problems affecting only 10 per cent of the world's population [3]. This "10/90 gap" is exacerbated in the biosciences field where there is a focus on illnesses that have onset in later life and that currently affect richer nations more dramatically.

PPPs may offer institutional solutions to the problem of neglected diseases providing incentive mechanisms for the development of new drugs, vaccine and diagnostics. As Buse and Walt note:

"There are many reasons why more organisations are embarking on health partnerships at both global and national levels. Shifting ideologies and trends in Globalisation have highlighted the need for closer global governance, an issue for both private and public sectors... There is also increasing recognition that the actions of one sector or organisation reverberate on others, and searching for common ground may be fruitful and lead to "win-win" interactions in an increasingly interdependent world. This has provided a forceful justification for the creation of public-private partnerships." [4]

Correspondence: Mrs. R. Hanlin, ESRC INNOGEN Research Centre, Old Surgeon's Hall, High School Yards, University of Edinburgh, Edinburgh, EH1 1LZ. E-mail: r.e.hanlin@sms.ed.ac.uk.

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A PPP can be defined as:

- "a 'not for profit' organisation using public, NGO, and (in some cases) private funds;
- having legal and operational independence from the collaborating bodies;
- including in its governance structures of representatives of the not-for-profit elements of civil society and of the public sector and the for-profit sector;
- using a method of working (in both contractual and non-contractual relationships) that seeks to combine the skills of the three groups to achieve the public health goal of developing new products for LDCs [Less Developed Countries]" [5].

One such area is in the development of vaccines to combat HIV/AIDS. The impact of HIV/AIDS is huge. For example, over 28 million people are estimated to be infected, in sub-Saharan Africa. The disease affects not only their health but also has knock-on effects to a country's agricultural productivity and food security [6], state resources and effectiveness. The need to find innovative solutions is therefore paramount. Innovation research in the area of vaccine discovery and development increasingly takes place through the innovative collaborative mechanism of the PPP.

PPPs are becoming increasing high profile and are driven by a broad range of institutions including the United Nations and bilateral donors such as the Rockefeller Foundation [8, 9]. PPPs have gained support in the development sector because of their innovative institutional form. They are seen as a component of 'new' thinking on practicing development in the era of Globalisation. As innovative institutional forms they redress the critiques of 'old', top-down forms of development. This combination of the old and the new, the present and the future are particularly powerful discourses that shape the rationale and practice of partnerships as fundamental development and innovation delivery systems [10]. This shift is also a reflection of a changing conceptualisation within the development arena of the concepts of 'development' and 'aid'. New understanding is developing of the role of aid primarily at a level of particular development priorities and secondarily as a catalyst of 'development' more broadly [11]. The rise of sector-wide approaches has also provided impulse towards the generation of new kinds of partnerships, specifically PPPs. New models of partnership between the NGO sector and the private sector are increasingly suggested as appropriate mechanisms to generate larger development impacts. The rise of PPPs also relates to technological changes that have been occurring within science and technology. Rising costs of research together with increasing sophistication and specialisation of research, particularly vaccine research [12], are leading to greater coordination and collaboration. This is particularly

true for the development of an HIV/AIDS vaccine, which is inherently more complex and risky than vaccines for diseases such as malaria and tuberculosis. The fragmentation of the vaccine research and design chain places greater emphasis on institutions to coordinate this process, particularly in the developing country context where the economic, if not the moral, demands of the market do not provide sufficient momentum to drive the process forward. As a result, partnerships are promoted due to the increase in outsourcing of work, the rise of portfolio approaches to vaccine development (overseeing the development of a number of vaccine candidates) and the use of a virtual pharmaceutical model as opposed to the traditional model whereby a large pharmaceutical company carries out the entire process [13].

#### PPP case study: IAVI

However, despite their popularity and discussions regarding their operational and governance arrangements (cf. [4,14]; the work of IPPPH, [www.ippph.org](http://www.ippph.org)), little scrutiny has yet been given to the way in which these collaborative mechanisms approach their mission of getting science to work for the poor and what they contribute to broader development objectives, particularly in relation to capacity building. Our work at the ESRC INNOGEN Research Centre has tried to address this issue by conducting a case study of the International AIDS Vaccine Initiative (IAVI) and their work on the ground in Africa and India. In particular, in our early work (2002 – 2004) on IAVI we have identified that by working as a PPP the organisation has changed the 'ownership' of science, making the process more flexible and emphasising a bottom-up dialogue process while advocating a private sector ethos. Secondly – whether intentionally or not – the partnership's emphasis on advocacy and communications increased the importance of knowledge generation and management activities within the partnership. This has increased the availability and access to knowledge by a variety of stakeholders.

IAVI was set up in 1996 from within the Rockefeller Foundation with the aim of promoting the development and delivery of an effective HIV/AIDS vaccine. IAVI is formally a not-for-profit organization based out of New York with scientific partners in 22 countries around the world. IAVI innovatively brings together the public and the private sector actors in vaccine development and operates with a significant degree of autonomy.

#### IAVI and organisational set-up

Based on the interviews we initially carried out and the understanding we built up of the organisation from these, we would argue that the key way in which IAVI combines the private and public sectors is related to its business ethos rather than its formal partnership arrangements. This ethos, together with a promotion of

the broader innovation system, in an attempt to work throughout the research-development-access (R-D-A) continuum and in a more co-operative manner on the ground has resulted in a change in 'ownership' within the partnership towards a more flexible and bottom-up dialogue process.

The organisation has a strong 'private sector' ethos that dominates the institutional set-up with an emphasis on "private sector efficiency". The result is a large number of employees with private sector backgrounds and the adoption of private sector management approach to its operations. At the same time, a focus is placed on not only the vaccine science but also developing vaccine preparedness within local communities and trial sites. This requires staff with experience from international development and the public sector.

These two strands of activity have seen IAVI develop a more inclusive approach. In order to successfully conduct both its science and community based advocacy activities, it has had to change the focus of its attention away from its headquarters in New York and focus its activities through regional offices. This has reduced initial attitudes towards IAVI in some of the countries that it was not in-tune with local cultures and needs. This is not the first time that such findings have been reported with regards to a PPP where they have been viewed as American or Western imposed initiatives [16]. A number of IAVI interviewees spoke about the need to integrate IAVI into developing countries' objectives and to work closely with local partners. Controversy in the early days in Kenya about IAVI's intellectual property rights (IPR) strategy and intent, also led to the need for a new approach. Although we do not deal with IPR issues in this paper, it is nevertheless important in terms of explaining IAVI's approach and structure and will be discussed in future papers. We also in this paper do not look in depth at the historical evolution of IAVI's evolving relationships with developing countries but again will be writing more about this in the future.

Through IAVI's Vaccine Development Partnerships (VDPs), the vehicle through which IAVI establishes substantive partnership with institutions in developing countries, vaccine development activities have become more sensitive to developing country approaches and needs. Relationships are not always smooth, of course, and there is still, for example, an underlying tension between capacity building objectives and IAVI's focus on developing a vaccine.

### **IAVI and Knowledge**

IAVI's private sector ethos places a centrality on advocacy and education within IAVI's mission and thus raises awareness of the organisation, its activities and the HIV epidemic more generally. Whether intentionally or not this has led to an emphasis on knowledge generation and knowledge management. IAVI also goes one step

further in creating and building informal relationships at numerous levels of the R-D-A continuum by packaging knowledge appropriately. These activities result in increased availability and access to knowledge by a variety of stakeholders.

Advocacy plays an important role in vaccine preparedness and creating an expectation, and consequently a demand, for the vaccine in countries where the vaccine candidates are currently under trial. In order to be successful at these activities, IAVI works not only at the grassroots level, - working with community groups and NGOs around the trial sites where vaccine research is taking place - but also conducts advocacy work at a policy level with government ministries, local and regional politicians and with healthcare providers to build up understanding and support for its activities. In India this has led to efforts to work with previous negative experiences of vaccine trials while also effectively engage a massive and traditionally hierarchical bureaucracy.

On the other hand, in many of the African countries in which IAVI works, its advocacy activities have created strong relationships with members of government, gaining significant backing from politicians and build popular demand for a vaccine within the local communities. For example, President Kagame of Rwanda has publicly supported IAVI's efforts in Rwanda. However, equally importantly, at the level of the community, IAVI's advocacy work has done much to provide an opportunity for communities to engage in discussions around the legal and ethical rights surrounding vaccine trials. Advocacy activities at a community level are as much about building demand through education and empowerment as they are about lending support to the trials themselves.

The emphasis IAVI puts on advocacy is therefore high. In fact, communications expenditure has been the second biggest spend on IAVI's budget. In the period 1996-2002 as IAVI was establishing itself in many countries, IAVI's communication spend was about 15% of its total expenditure.

IAVI does not just value the importance of communication as an advocacy tool. IAVI also understands the importance of investing in intensive communication with those involved directly with the vaccine research work within, and between, its various VDPs. For example, IAVI sees the value of weekly telephone conferences between those working in the laboratories and particularly between those within VDPs conducting clinical trials. These weekly conversations provide a mechanism through which scientists and lab staff can discuss similar situations, learn how others tackled problems and avoid situations whereby lab staff have to 're-invent the wheel'. In this way, IAVI understands the importance of learning through communication. IAVI places a value on intuitive knowledge that comes from practice and experience and



which is less easily articulated and written down for ease of learning. This 'tacit knowledge' as it is known, differs according to a variety of cultural, political and economic constructions affecting it at a certain place and time. IAVI recognizes the importance of bridging differences in knowledge and its conceptualization in order for its activities to effectively function. As some knowledge theorists have pointed out this means that knowledge has the ability to bridge differences that value knowledge and construct it in different ways [17]. In this way, IAVI uses tacit knowledge like an economic firm. It understands the way in which tacit knowledge can be used to maximize its outputs through increasing learning, innovation and sustainability [18]. In a sense, IAVI could be seen as a good example of a learning organisation [19, 20].

The ability of an organization to be able to articulate and manifest different forms of knowledge is important. In particular, knowledge can do both explicit and implicit (tacit) in form and this is important for development [21, 22]. The implicit, tacit knowledge discussed above which IAVI seems articulate at managing is gained through trust and relationships and developed through experience and intuition [23]. This is the opposite to more explicit knowledge which tends to be codified being generated through study and deduction and which makes it easier to share. However, these two forms of knowledge are rarely separate or discrete but rather are produced through a complex interaction and interplay between them [24].

As already stated, IAVI is similar to an economic firm in its ability to utilize knowledge. Management of explicit and tacit knowledge is an important role of the firm and occurs within the context of a firm's interactions with external economic realities [25]. The creation of new knowledge relies heavily on the utilisation of tacit knowledge. The learning and innovative capacity of an institution, and by extension its ability to transmit learning and capacity throughout its network of partners, is heavily dependent on its initial ability to mobilise tacit knowledge and interact this with explicit knowledge [21].

The way in which IAVI wields information through its advocacy and communication efforts, and in so doing conceptualises knowledge, is interesting from a number of perspectives and, we argue, one of its core strengths. IAVI is able to package knowledge in such a way as to provide a means to create informal relationships with a range of stakeholders. It knows who needs information and knowledge and in what form and of what type. So despite having few links in India or in the African countries initially in which it works IAVI has been able to get vaccine trials on a national wide agenda through its engagement with local media and the dissemination of information through word of mouth.

IAVI in its ability to utilise this knowledge, to set it free to explore other opportunities seems to have been more successful – through its focused private sector

orientated approach – than the more diffuse spans of development agencies and intervention. Tangible interventions have lead to not only tangible benefits (such as recruitment to vaccine trials) but also intangible benefits in the form of knowledge capacity.

IAVI's ability to create informal relationships with numerous different actors increases the availability of knowledge and access to such knowledge. Perhaps more interestingly, IAVI's approach to knowledge management particularly in its advocacy work, is novel in the development field. This is particularly true in relation to IAVI's two pronged activity of building up awareness and demand at the same time. And yet, it resonates with classic work on institutional development, albeit in a different context, which emphasises the importance of thinking about 'voice' [26] and which is currently at the heart of much of international development strategy. IAVI provides an opportunity for dialogue and its success in this area is important for development actors to consider. The recognition of dialogue is essential in making science work for the poor.

### **Discussion – organisation, knowledge and capacity building**

The emphasis IAVI puts on communication we believe is key to its success in building and disseminating knowledge and this in turn is vital for the type of capacity building that IAVI has achieved. Such 'mode 2' or networked based product-based capacity building is key to successful innovation but is not however common of typical capacity building activities [27]. The networks of linkages IAVI has made in India and in various African countries are the result of investments in personnel, infrastructure and resources. IAVI recognized the importance of these linkages realizing their importance in the future as trials began or when an effective vaccine has been developed.

This emphasis on capacity building is an often overlooked aspect of IAVI's key activities. Our discussions with IAVI personnel showed a high degree of differing opinion regarding the importance of capacity building in order for IAVI to be successful. While there were those who saw capacity building as a key part of IAVI's activities and a need for developing country partners to be 'true' partners with 'ownership' over activities others saw it as a consequence of its general activities.

For true ownership to occur some form of capacity building is required in order that developing country institutions can not only have a full role in conducting trial research (leading such research and not just undertaking it) but also that the enabling environment is created to ensure these countries can conduct the lobbying and regulatory activities that go side-by-side such scientific activity.

One interviewee pointed out that in India for example this capacity exists and it is a strength that IAVI

recognised the world class capability that does exist in developing countries and is committed to using it. Others thought that practically it was necessary but that it was not an essential aim of IAVI. One interviewee saw the tension in terms of IAVI goals and donor objectives:

*[Capacity building] is not part of IAVI's mission, or a mandate but it is part of the reason we're funded. The IAVI mission and mandate is clear which is to develop a vaccine. That probably, by the way, can't be done without capacity building in the developing world but its not part of the mission and mandate. In other words, as a strategy it's probably essential, in the truer sense in that without it we probably can't achieve what we want to but it's not part of the mission mandate.*

Capacity building clearly has taken place as a result of IAVI's activities. In Kenya, IAVI has been criticised for its 'aggressive style' and for being culturally insensitive [28], but there too activities suggest that real efforts have been made to changes in its operating style and there is evidence of capacity building. Our research of the Kenya AIDS Vaccine Institute (KAVI), IAVI's long term Kenyan vaccine development partner, since 2004 has been able to think about diversifying both its funding sources and research activities to ensure its long-term viability. A similar situation has occurred in Rwanda too. The leader of IAVI's partner project in Rwanda, Dr. Etienne Karita, in 2004 had a vision that saw Rwanda becoming a centre of excellence for vaccine trials more generally and above and beyond the work that was currently taking place with IAVI.

This diversification in activity, whilst potentially problematic to manage, illustrates the concrete capacity building that has resulted from IAVI interventions, particularly in Africa. IAVI, in partnership with African scientists, has funded the creation of institutions such as KAVI and the regeneration of the Ugandan Virus Research Institute's research on the HIV virus. That these institutes have a vision of vaccine research and trialing beyond HIV and beyond IAVI is a testament to the resource redistribution that has occurred, and also to an extent testament to a flexibility within the management of IAVI partnerships. The building and refurbishing of laboratories, the provision of funding for running expenses and the training and updating of scientists' and technicians' knowledge that has taken place in the three East African countries appears to have generated concrete gains in capacity.

The emphasis placed on knowledge – on its generation and management – is a less intangible but no less important form of capacity building that occurs within IAVI and is the result of the emphasis it places on advocacy and communication. These are important areas of capacity building that occur alongside more

traditional physical capacity building activities in the form of training and resource provision [29]. Much of the success that IAVI and its partners within the VDPs have had in building such knowledge capacity is due to the centrality placed on verbal communication. This provides avenues for the exchange of both the more tacit knowledge as well as that which is more easily codified. This importance of tacit knowledge to knowledge sharing is stressed by those working in the area of knowledge management:

*"The richer the communication experience, the more effective the knowledge sharing... Too often we see organisations focus too much of their design efforts on codifying explicit knowledge and not balancing this with cultural change interventions."* [30].

By drawing on the traditions, thinking and ideologies of the private sector IAVI has created a virtually unique space for itself in even the broadest institutional typology in relation to knowledge capacity. IAVI negotiates an ambiguous line between the public and private sectors. In many respects IAVI acts as a venture capitalist, investing public money in the most promising vaccine research, but IAVI's rationale is couched in the language of market failure, of the inability of the market to provide what is needed. IAVI may well have a private sector core, but the periphery is rooted in the NGO and public sectors, engaging with state institutions, NGOs, communities and scientists in an effort to build real capacity.

IAVI is an example of a new kind of hybrid institution that blurs the traditional boundaries between the public and the private. Although PPPs such as IAVI in being hybrid organizations of this type raise important governance issues, we have not discussed these here, partly because, as we mentioned earlier, they have been addressed extensively elsewhere by others. Our discussion has been focused on their role as providing opportunities for capacity building. Here the public-private distinction is also important.

Just as there are questions about the ability of the public and private sectors to work together from a governance perspective, this mistrust is also seen in current thinking regarding capacity building in the development sector. Here an emphasis revolves around uneasy alliances between usually separate public and private entities with differing and not always certain goals [27]. IAVI as a public sector actor working in similar ways to a private sector 'firm' does not fit this traditional construct and as such deserves analysis. It is not yet clear whether IAVI can provide a blueprint for a new kind of PPP. However, there is no doubt that some aspect of IAVI's set up and operation means it provides the opportunity for more capacity building and thus more bottom-up sustainable longevity. We should perhaps add a caveat however as how IAVI will

adapt and change to meet future challenges is as yet unknown but is perhaps in itself the result of its fluid, adaptive and creative ability to manage knowledge. Despite this, it is still possible that the dominance of the private sector ethos which has done so much to ensure an implicit capacity building approach to IAVI's work, may still overshadow these activities should the focus on scientific outcomes increase to eclipse its more broader development activities, that have led to its successes in the area of advocacy and knowledge creation at the community and policy levels. As a result however, there is no doubt that the case study of IAVI has and will continue to remain an exciting example for use to explore new institutional and relational topographies that help us to understand the rise and implications of the concepts such as 'partnership' and 'capacity building' within the development lexicon.

In particular, the way in which IAVI as an institution understands and manages communication and knowledge – and consequently it would seem also development, innovation and capacity building – in much deeper and more nuanced ways than many development institutions will remain an important aspect to consider. IAVI appears to understand the mix of tacit and explicit sets of knowledge needed to firstly engage with local partners, and secondly, to build capacity in local partners. Within IAVI there is an understanding not only of how to relate and operationalize tacit and explicit knowledge to generate capacity and innovation, but also to understand that the relationships themselves between these sets of knowledge are deeply embedded in the particular set of contexts. This understanding alerts IAVI to the need to spend two years working on advocacy in India as a prelude to clinical trials and to work with the Indian government's insistence that Indian institutions be centrally involved in all aspects of work. Or the need to build political demand where economic demand does not exist or the need to undertake clinical trials in various developing country locations to build appropriate capacity and demand. Or to the need to improve information sharing in East Africa through the opening of a regional management centre.

This ability to use and build knowledge in such a sophisticated way is singularly lacking in many international development projects, where understanding of knowledge and capacity building tends to be limited to creating hierarchies of indigenous and scientific knowledge (formal training programmes and investment in research infrastructure unrelated to concrete projects, for example). IAVI demonstrates that this deeper understanding of knowledge may provide a much more useful perspective in understanding the failures of development to do the things that IAVI is good at, maintaining a tight focus, building capacity, managing partnerships as simply as possible.

At the same time because capacity building is not a core part of IAVI's mission it is very possible that

hurried evaluations may miss the capacity that has been built. This may particularly be a problem as the love affair that the development world currently has with PPPs begins to fade. That is not to say that IAVI operations could not be improved or that the public sector in various countries could not work more productively with IAVI to build capacity further. But it would be incorrect to assume that because capacity is not highlighted as central to the mandate that capacity has not been built.

### Conclusions

In an international environment where accountability and good governance are paramount, there is a need to adequately understand how development funds are being used and to what advantage. There is international tension as a result between spending such funds on readily available and more easily identifiable new drug candidates and on HIV vaccine research which it still a long way off. However, as we have shown in this paper, it is possible for money spent on HIV vaccine research to not only move forward with scientific progress towards finding a vaccine but to be in line with more traditional development agendas around the creation of tangible development and capacity pay offs in a relatively short time period. As such, taking knowledge – how it is built and used – as a starting point for further research into capacity building and PPPs for health biotechnology may provide new insights otherwise not explored in traditional development research.

Our case study of IAVI would suggest that it is a new type of PPP that blurs the boundaries between 'public' and 'private' which has built more than an 'uneasy alliance' between these sectors using knowledge to overcome context related problems on the ground. The structure and functioning of IAVI in Africa and India highlight the context bound nature of health partnerships and their efforts to interact with and build upon national systems of innovation, and the embeddedness of the political and cultural norms that shape institutions across Africa and India. IAVI's success is perhaps that it manages to engage with the larger environment in which it operates, whilst staying focused. This balancing act results in somewhat of a paradox. Whilst IAVI operates in some ways like a focused firm it contributes to broader capacity building. Whilst IAVI is tightly focused, IAVI partnerships need to be understood, and certainly analysed, as something more than partnerships or strategic alliances focused purely on achieving the common goal of creating a HIV vaccine. The sum of the parts that IAVI creates is more than the whole.

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